Form 2509 Rev. 9/47

DATE February, 1957

# THE OHIO OIL CO.
# LOG AND CORE RECORD

FIELD Ryans Creek

WELL NO. 1 LEASE Ryans Creek Unit BLOCK SEC. 34 T 1S R 98W

STATE Colorado PARISH COUNTY Rio Blanco

660' from South line
660' from East line

MEASUREMENTS TAKEN FROM
- Top of Oil String K.B. ELEV. 6744
- Top of Rotary Table D.F. ELEV. 6742
- Grd. or Mat ELEV. 6732

CORE DESCRIBED BY

TITLE

| DEPTH TOP | DEPTH TO BOTTOM | THICKNESS | DRILLED OR CORED | RECOVERY | DESCRIPTION |
|---|---|---|---|---|---|
| | | Spudded in Evacuation Creek Member of Green River Fm. | | | |
| 0 | 60 | 60' | Drilled | | No samples. |
| 60 | 70 | 10' | " | | Claystone, buff, sl. cal. |
| 70 | 120 | 50' | " | | Siltstone, very light gray, calcareous interbedded with sand stone, buff to light gray, medium, calcareous. |
| 120 | 130 | 10' | " | | Sandstone, green fine to medium grained calcareous, pyritic micaceous with siltstone as above. |
| 130 | 170 | 40' | " | | Same as 70' - 120'. |
| 170 | 180 | 10' | " | | Sandstone, light gray, medium to coarse grained, calcareous, angular. |
| 180 | 220 | 40' | " | | Siltstone, light gray, calcareous, sandy, with interbedded sandstone, light gray, fine to medium grained, micaceous |
| 220 | 240 | 20' | " | | Sandstone, light gray, very fine to medium grained, micaceous, angular, very calcareous with some siltstone as above. |
| 240 | 300 | 60' | " | | Siltstone, light gray, calcareous, sandy with sandstone, as above. |
| 300 | 320 | 20' | " | | No samples |
| 320 | 330 | 10' | " | | Siltstone, buff to very light gray, slightly calcareous, with interbedded sandstone, light gray, very fine to medium grained. |
| 330 | 420 | 90' | " | | Sandstone, light gray, very fine grained, grading into light gray siltstone. |

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FIELD Ryans Creek

WELL NO. 1 LEASE Ryans Creek Unit BLOCK SEC. 34 T 1S R 98W

STATE Colorado PARISH COUNTY Rio Blanco

660' from South line
660' from East line

MEASUREMENTS TAKEN FROM
- D.F. ELEV. 6741
- TOP OF OIL STRING K.B. ELEV. 6744
- TOP OF ROTARY TABLE ELEV. 6742
- GRD. OR MAT ELEV. 6732

CORE DESCRIBED BY

TITLE

| DEPTH TOP | DEPTH TO BOTTOM | THICKNESS | DRILLED OR CORED | RECOVERY | DESCRIPTION |
|---|---|---|---|---|---|
| 770 | 800 | 30 | Drilled | | Marlstone, light gray to light brown, silty. |
| 800 | 810 | 10 | " | | Marlstone, light brown with numerous dark brown oil shale stringers. |
| 810 | 820 | 10 | " | | Oil shale, dark brown to brown. |
| 820 | 870 | 50 | " | | Marlstone, light brown with oil shale stringers, oil shale becomes more abundant at 840. |
| 870 | 880 | 10 | " | | Interbedded marlstone, light brown and oil shale, brown. |
| 880 | 960 | 80 | " | | Marlstone, light brown, pyritic, micaceous, medium calcareous, with thinly laminated brown oil shale strea |
| 960 | 990 | 30 | " | | Marlstone, light to dark brown, medium calcareous, with thin streaks oil shal dark brown, fissile. |
| 990 | 1000 | 10 | " | | Marlstone, tan with streaks marlstone, brown, very calcareous. |
| 1000 | 1020 | 20 | " | | Siltstone, light gray to brown, calcareous, sandy. |
| 1020 | 1070 | 50 | " | | As above with some brown marlstone. |
| 1070 | 1110 | 40 | " | | Marlstone, light gray to tan, medium calcareous, with streaks dark grayish brown fissile oil shale gradually increasing in amount. |
| 1110 | 1200 | 90 | " | | Marlstone, tan to brown with light gra calcareous siltstone 1110-1120, and dark grayish brown, fissile oil shale to 1150. |

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# LOG AND CORE RECORD

FIELD Ryans Creek

WELL NO. 1 LEASE Ryans Creek Unit BLOCK SEC. 34 T 13 R 98W

STATE Colorado PARISH COUNTY Rio Blanco

660' from South line
660' from East line

D.F. ELEV. 6741

MEASUREMENTS TAKEN FROM
- TOP OF OIL STRING K.B ELEV. 6744
- TOP OF ROTARY TABLE ELEV. 6742
- GRD. OR MAT ELEV. 6732

CORE DESCRIBED BY E. L. Flott

TITLE Associate Geologist

| DEPTH TOP | DEPTH TO BOTTOM | THICKNESS | DRILLED OR CORED | RECOVERY | DESCRIPTION |
|---|---|---|---|---|---|
| 2800 | 2920 | 120 | Drilled | | Oil shale, brown to dark brown, slightl calcareous and silty, with some interbedded light gray to gray shale, |
| 2920 | 2946 | 26 | " | | Shale, gray to brownish gray, very slightly calcareous. |
| 2946 | SCHLUMBERGER TOP - ORANGE MARKER - (+3786) | | | | |
| 2946 | 3000 | 54 | Drilled | | Oil shale, brown to dark brown, slightly calcareous, and silty with some interbedded light gray to gray shale. |
| 3( | 3100 | 100 | " | | Shale, gray to brown, with some brown oil shale streaks. |
| 3100 | 3183 | 83 | " | | Shale, gray to brownish gray, non-calcareous, with calcite fossil fragments 3150-3183 |
| 3183 | SCHLUMBERGER TOP - DOUGLAS CREEK "B" SANDSTONE - (+3549) | | | | |
| 3183 | 3192 | 9 | Drilled | | Sandstone, white to light gray, very fine to fine grained, sub-angular to sub-round, very calcareous, salt and pepper appearance, glauconitic, no gas shows. |
| 3192 | 3302 | 110 | " | | Shale, gray to brownish gray, non-calcareous with cavings of above sandstone. |
| 3302 | SCHLUMBERGER TOP - DOUGLAS CREEK "C" SANDSTONE - (+3430) | | | | |
| 3302 | 3321 | 19 | Drilled | | Sandstone, white to light gray, very fine to fine grained sub angular to sub round, very calcareous, salt and pepper appearance, glauconitic. |
| 33[illegible] | SCHLUMBERGER TOP - WASATCH FORMATION - (+4411) | | | | |
| 3321 | 3390 | 69 | Drilled | | Drilled shale, gray with cavings of above sandstone. |

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# THE OHIO OIL CO.
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FIELD Ryans Creek

WELL NO. 1 LEASE Ryans Creek Unit BLOCK SEC. 34 T 1S R 96W

STATE Colorado PARISH COUNTY Rio Blanco

660' from South line
660' from East line

MEASUREMENTS TAKEN FROM
- Top of Oil String D.F. Elev. 6741
- Top of Rotary Table K.B. Elev. 6744
- Grd. or Mat ____ Elev. 6742.6
- Grd. or Mat ____ Elev. 6732

CORE DESCRIBED BY _____

TITLE _____

| DEPTH TOP | DEPTH TO BOTTOM | THICKNESS | DRILLED OR CORED | RECOVERY | DESCRIPTION |
|---|---|---|---|---|---|
| 420 | 430 | 10' | Drilled | | No samples. |
| 430 | 470 | 40 | " | | Siltstone, very light gray, calcareous. |
| 470 | 560 | 90 | " | | Siltstone, as above, grading into sandstone, very fine grained, slightly pyritic. Several of samples mostly lost circulation material. |
| 560 | 580 | 20 | " | | Siltstone, very light gray, pyritic, calcareous, with occasional thin stringers of low grade oil shale. |
| ) | 600 | 20 | " | | Marlstone, white, slightly pyritic, with stringers oil shale. |
| 600 | 610 | 10 | " | | Oil shale, gray, low grade, with some interbedded marlstone. |
| 610 | 640 | 30 | " | | Oil shale, brown to light brown. |
| 640 | 650 | 10 | " | | Oil shale, with interbedded siltstone, light gray, pyritic grading into sandstone, light gray, very fine grain |
| 650 | 670 | 20 | " | | Samples. Mostly lost circulation material. |
| 670 | 700 | 30 | " | | Oil shale, as above, with interbedded siltstone, buff grading into very calcareous marlstone and limestone. |
| 700 | 750 | 50 | " | | Marlstone, light brown to buff, very calcareous with some interbedded brown oil shale. Samples mostly lost circulation material. |
| 750 | 760 | 10 | " | | Siltstone, light gray to light brown, calcareous. |
| 760 | 770 | 10 | " | | Mostly lost circulation material, probably as above. |

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# THE OHIO OIL CO.
# LOG AND CORE RECORD

FIELD Ryans Creek

WELL NO. 1 LEASE Ryans Creek Unit BLOCK SEC. 34 T 13 R 98W

STATE Colorado PARISH COUNTY Rio Blanco

660' from South line
660' from East line

D.F. ELEV. 6741

MEASUREMENTS TAKEN FROM: TOP OF OIL STRING K.B. ELEV. 6744; TOP OF ROTARY TABLE ELEV. 6742; GRD. OR MAT ELEV. 6732

CORE DESCRIBED BY

TITLE

| DEPTH TOP | DEPTH TO BOTTOM | THICKNESS | DRILLED OR CORED | RECOVERY | DESCRIPTION |
|---|---|---|---|---|---|
| 1200 | 1330 | 130 | Drilled | | Marlstone, brown, hard calcareous. |
| 1330 | SCHLUMBERGER TOP - MAHOGANY MARKER - (+5402) | | | | |
| 1330 | 1350 | 20 | Drilled | | Marlstone, tan to brown with several thin beds of tuff, light gray, some micaceous. |
| 1350 | 1490 | 140 | " | | Marlstone, tan to brown with varying amounts oil shale. |
| 490 | SCHLUMBERGER TOP - BLACK MARKER - (+5242) | | | | |
| 1[illegible] | 1560 | 70 | Drilled | | Marlstone, light gray to brown, medium calcareous, pyritic with thin laminations dark brownish gray oil shale. increasing from 1510 - 1530 and decreasing to 1560. |
| 1560 | 2400 | 840 | " | | Marlstone, light gray to light tan to brown, slightly calcareous some brown laminated oil shale, pyritic, with crystal casts, probably salt. Increase in dark oil shale, from 1610-30. Salt casts abundant from 1790-1800; minor color variation throughout interval; bleeding gas from minute fractures. |
| 2400 | 2500 | 100 | " | | Oil shale, light tan to dark brown, slightly calcareous. |
| 2500 | 2670 | 170 | " | | Oil shale, light tan to dark brown, slightly calcareous. |
| 2670 | 2764 | 94 | " | | Oil shale, light tan to dark brown, slightly to medium, calcareous, slightl silty. |
| 2[illegible] | SCHLUMBERGER TOP - BLUE MARKER - (+3963) | | | | |
| 2764 | 2800 | 36 | Drilled | | Oil shale, as above with marlstone, very light gray from 2780 - 2800. |

)/2/56 up surface casing to 1000# for 1 hour, held OK. Drilled cement plug and shoe at 6:00 a.m. 622 - 631 cement: 631 - 632 plug; 632 - 649 cement: 649 - 650 shoe; 650 - 655 cement; 655 - 886 open hole. Drilling ahead and working on pump. Came out of hole at 7:30 p.m. to work BOP and install high pressure nipple. T.D. at midnight, 1038'

10/3/56 Finished installing H.P. nipple, checked BOP, cleaned out pump, drilling ahead with Bit #4. Lost 25 bbls. mud on evening tour. T.D. at midnight, 1324'.

10/4/56 Lost 20 bbls. mud during morning tour. Drilling ahead. Made trip to put on Bit #5 at 1530'. Losing mud slowly throughout evening tour, lost returns at 1693'. Lost a total of 100 bbls. mud during evening tour. T.D. at midnight, 1752'.

10/5/56 Losing mud throughout morning, lost total 200 bbls. mud heavily gas - cut. Lost 50 bbls. mud during daylight tour. Made trip to pick up Haliburton testing tool. Ran DST No. 1., T.D. 1906'. Tested from 1818 - 1906. Drilling ahead at midnight with Bit #6., T.D. 1919'.

10/6/56 Drilling ahead during morning tour. Drilling ahead during daylight tour. Came out of hole to run Equity Oil Co. Electric Log at 2167'. Completed logging during evening tour. Bit plugged when back on bottom. Log data: top Mahogany Marker - 1330', top Black Marker - 1490'. Couldn't get logging sonde below 1705' because of hole bridge. T.D. at midnight, 2167'.

10/7/56 Trip to unplug bit. Drilling ahead during daylight tour. Baroid mud check during daylight tour found mud filtrate containing 18,000 p.p.m. salt. Drilling ahead during evening tour. Started trip for Bit #7. T.D. at midnight, 2498'.

10/8/56 Finished trip, found bit plugged when on bottom. Made trip to unplug bit. Back on bottom and displaced old mud with new mud system. Lost 80 to 100 bbl. of mud on daylight tour. Circulated 1 hr. to condition hole for running electric log. Ran Equity Oil Co., Electrical Survey Log to 2691'. Drilling ahead. T.D. at midnight, 2740'.

10/9/56 Drilling ahead and working on rig. Evening tour replaced old mud with new. T.D. at midnight, 3225'.

10/10/56 Morning tour lost 40 bbls. of mud. Drilling ahead. Evening tour lost 30 bbls. of mud. Started trip for Bit #9. T.D. at midnight, 3462'.

10/11/56 Morning tour going in hole with Bit #9. Hit bridge when 2 stands off bottom. Drilled bridge out and washed 20' of cavings to bottom. Lost 20 bbls. of mud on daylight tour. Lost 25 bbls. of mud on evening tour. T.D. at midnight, 3760'.

10/12/56 Made trip for Bit #10 on morning tour. Drilling ahead. Lost 300 bbls. of mud on daylight tour. Mixed mud and added lost circulation material. Lost 15 bbls. mud during evening tour. T.D. at midnight, 4006'.

10/13/56 Drilling ahead. Made trip for Bit #11 at 4124'. T.D. at midnight, 4225'.

10/14/56 Drilling ahead. Screened lost circulation material out of mud. Made trip for Bit #12 at 4343'. Lost 125 bbls. mud during evening tour. T.D. at midnight, 4381'.

10/15/56 Drilling ahead. Lost 25 bbls. mud during morning tour. Made trip for Bit #13 at 4525'. T.D. at midnight, 4525'.

'30/56 Going in hole with diamond core. Circulating to clean hole. Coring. Cut core #3, 6103' - 6125'. Coming out of hole with core barrel. Going in hole with Bit #21. On at 6124' after reaming core hole. Lost 30 bbls. mud during evening tour. Drilling ahead. T.D. at midnight, 6165'.

10/31/56 Made trip for Bit #22, on at 6276'. Reamed hole from 6251' to bottom. Drilling ahead. T.D. at midnight, 6285'.

11/1/56 Drilling ahead. Circulating to condition hole for Schlumberger at end of evening tour. T.D. at midnight, 6415'.

11/2/56 Ran Schlumberger Electric Log to 6415'. Going in hole with bit #23 at 6415'. Drilling ahead. Lost 120 bbls. mud at 6475'. T.D. at midnight, 6502'.

11/3/56 Drilling ahead. Coming out of hole for Bit #24, at end of daylight tour at 6580'. Bit #23 made 165'. Going in hole. T.D. midnight, 6604'.

11/4/56 Drilling ahead. Pipe binding in spots. T.D. at midnight, 6703'.

11/5/56 Coming out of hole for Bit #25 at 6703'. Slipped drilling line 60'. Going in hole and drilling ahead. Lost 120 bbls. of mud. at 6739' and 6744'. Electrical Log tops; Mahogany Marker 1330', Black Marker 1490', Blue Marker 2764', Orange Marker 2946', Douglas Creek "B" 3183', Douglas Creek "C" sandstone 3302', Wasatch Formation 3321'. T.D. at midnight, 6810'.

11/6/56 Drilling ahead. Made trip for Bit #26 at 6818'. Circulated for DST #3. Coming out of hole for DST #3. T.D. at midnight, 6835'.

11/7/56 Went in hole with Johnston testing tool. DST#3, 6755' to 6835' two packers. Misrun due to packer failure. Recovered 800' mud. Came out of hole with tool. Changed test tool and went back in hole for DST #3A. Packer again failed. Came out of hole and went back in with bit to clean out. Coming out of hole, waiting on tester. T.D. at midnight, 6835'.

11/8/56 Made up Johnston testing tool and went in hole for DST #3B. Used three packers. Packers failed after 10 min. Reset and failed again in 10 min. Misrun, packer failure. Came out of hole and went back in with Bit #26 and drilled ahead. Lost circulation at 6858', 200 bbls. mud. Mixed mud and lost 380 bbls. more. T.D. at midnight, 6883'.

11/9/56 Drilling ahead. Still losing mud (200 bbls.) Drilling. Circulated for sample, drilling. Beginning trip out. T.D. at midnight, 7052'.

11/10/56 Making trip for Bit #27 at 6989'. Mixing mud. Drilling ahead. Making trip for bit at end of evening tour. Changed drilling line. T.D. at midnight, 7052'.

11/11/56 Going in hole with Bit #28 and junk sub. Drilling ahead. Came out of hole for core barrel to cut Core #4. Went back in hole with core barrel and pressured up. Coring ahead. T.D. at midnight, 7087'.

11/12/56 Coring. Came out with Core #4. Recovered 25', 6' sandstone, 19' shale. Went back in hole with Bit #29 at 7087' to ream. Drilling ahead at 7087'. Circulated for sample. Made trip for core barrel. Coring. T.D. at midnight, 7106'.

'24/56 Broke up iron in hole and came out. Laid down jars and cleaned iron out of junk sub. Went in hole with bit and junk sub, drilled out bridge at 7154' and drilled 4' of new hole. Came out of hole and cleaned junk basket. Went in hole with core barrel to cut Core #12. T.D. at midnight, 7287'.

11/25/56 Coring ahead. Pulled Core #12 at 7299'. Went back in hole to cut Core #13. T.D. at midnight, 7301'.

11/26/56 Coring ahead. Core barrel plugged at 7306'. Came out of hole. Went in hole with Bit #32 and reamed rat hole, 7285' - 7306'. Drilling ahead. Bit plugged at 7327'. Coming out of hole at midnight.

11/27/56 Went in hole with Bit #34 on bottom at 7327'. Drilling ahead. Lost 120 bbls. mud between 7340' - 7345'. Lost 65 bbls. mud during evening tour. T.D. at midnight, 7382'.

11/28/56 Drilling ahead. Lost 70 bbls. mud at 7390'. Circulated sample for 1-1/2 hrs. at 7413'. Came out of hole to pick up core barrel. Went in hole to cut Core #14. Core binding first 2 ft., stopped at 7419'. Coming out of hole at midnight.

11/29/56 Finished coming out of hole, recovered core #14, dressed core barrel. Went in hole to cut Core #15. Coring ahead. Not coring properly at 7426', coming out of hole. Outer barrel came off at safety joint and remained in hole. Went in hole with overshot. Worked down over fish and came out of hole. Recovered fish. Breaking down overshot and dressing core barrel at midnight, T.D. 7426'.

30/56 Went in hole with 9" bit and reamed rat hole from 7413' - 7426'. Came out of hole and picked up new core barrel and went in hole to cut Core #17. Coring ahead. T.D. at midnight, 7436'.

12/1/56 Coring ahead. Core barrel jammed at 7445. Coming out of hole. Recovered Core #17. Went in hole with Bit #34 to ream rat hole and drill ahead. No. 1 motor missing. T.D. at midnight, 7461'.

12/2/56 Drilling ahead. Repairing #1 motor, drilling with motor #2. Pulled Bit #34 at 7486'. All 3 cores left in hole. Going in hole with flat bottom bit and junk sub at midnight.

12/3/56 Coming out with bit and junk sub. Going in with magnet. Came out with magnet, couldn't make bottom. Back in with bit, junk sub and jars. Coming out of hole, recovered most of bearings from cones. Going back in with magnet at midnight.

12/4/56 Finished coming out with magnet, went back in hole with bit to ream. Drilling ahead at start of daylight tour. Came outof hole for Bit #37. Slipped and cut drilling line. Going in hole at end of tour. T.D. at midnight, 7506'.

12/5/56 Drilling ahead. Coming out of hole for Bit #38. Relined brakes and went back in hole with bit #38. Difficulty reaching bottom - bridges, cavings. T.D. at midnight, 7551'.

12/6/56 Drilling ahead. Hoisting, slipped drilling line. Going in hole with Bit #39. T.D. at midnight, 7588'.

12/7/56 Drilling ahead, Lost 60 bbl. mud at 7641'. Hoisting. Back in hole with Bit #40. T.D. at midnight, 7678'.

18/56 Ran Baker full bore packer on tubing with 30' stinger below. Set packer at 7561'. Swabbed water in tubing down to 7500' in 3 hours. Put gauge on tubing and shut well in. Pressure built up 25# in 4 hours. Well making gas at 1,000 cubic feet per day.

12/19/56 PBTD 7768'. Reset Baker full bore packer at 7561'. Water Sand Squeeze by HOWCO using two twin T-10 pump trucks and one 70 bbl. blender. Loaded and pressured annulus to 1000#. Broke formation down with water mixed with Dowflake ($CaCl_2$) at 2600# - 2400# at 14 bbls. per min. through perforations in Mesa Verde 7620' - 7650' and 7724' - 7753'. Water Sand Squeezed with 4400# (20-40 mesh) sand, 1000# $CaCl_2$, 8 gallons Hyflow and 420 bbls. water at 12 bbls. per min. and 2900# - 2800# pressure. Displaced with 50 bbls. water mixed with 100# $CaCl_2$. Put 65 hard rubber perforation plugging balls in tubing and water sand squeezed with 3100# (20-40 mesh) sand. 950# $CaCl_2$, 7 gallons Hyflow and 226 bbls. water at 12-1/2 bbls. per min. and 2900# pressure with breaks to 2750# pressure. Displaced with 60 bbls. water and 150# $CaCl_2$. Pressure dropped to 700# and bled to 400# in 20 min. Bled well back for 4 hours with pinched stream. Rigged up and started swabbing water from well.

12/20/56 PBTD 7768'. Swabbing from 7500'. Amount of fluid not measured. Well gauges 100,000 cubic feet per day after swab pulled and then blow diminishes to 20,000 cubic feet per day in 2 or 3 min.

12/21/56 PBTD 7768'. Shut well in for an hour and a half and pressure built to 35#. Took gas sample in container to Chemical and Geological Laboratory in Casper, Wyoming for content analysis.

12/22/56 PBTD 7768'. Sand-fraced with 25,000# sand and 31,000 gal. of water by HOWCO. Mixed 1st. 20,000# sand at 3/4#/gal. and remaining 5000# at 1#/gal. Initial pressure 800 psi. Displaced with only 100 bbls. of water at which time HOWCO's head broke when pressure reached 2500 psi. Estimate 11,500# sand in formation and 13,500# left in casing. Note: This estimate is after going in hole with tubing and finding 368' of sand in casing (4.56 gal/sack of sand). Average injection rate was 23.8 bbls/min. Slowed pumps to 12 bbls/min. while displacing sand because water supply couldn't keep up with HOWCO. Also, injected 190 - 15/16" hard rubber balls to plug off perforations as follows: 60 balls after mixing 5000# sand, 65 balls after mixing 10,000# sand and 65 after mixing 18,000# sand. Pressure hit 2500 psi when 2nd. batch hit perforations.

12/23/56 PBTD 7768'. Circulated sand out of casing. Found 145 balls. The total balls run on this job and previous job was 258.

12/24/56 PBTD 7768'. Went in hole with tubing and Baker Full Bore retrievable cementer. Set tool at 7560' KB. Rigged up to swab.

12/25/56 PBTD 7768'. Shut down for Christmas.

12/26/56 PBTD 7768'. Swabbing well. Swabbed tubing down to tool. Swabbing water from formation. Getting good gas blow of about 200,000 cf/d just after getting swab out. Blow would die to nothing in 15 min.

12/27/56 PBTD 7768'. Preparing to perforate.

12/28/56 PBTD 7768'. Perforated from 7474' to 7500' using B.J. Service Inc. 5" gun, 1/2" bullets at 4/ft. Perforated using Gamma Ray Neutron Log measurements and collars. Ran junk basket by B.J. with gauge ring diameter of 6.0875". Hole clean. Ran Baker Model "C" retrievable bridge plug on Baker full bore retrievable cementer.

5/57 PBTD 7457'. This time with 1000 psi on casing broke formation down with 3800 psi and took 2-1/2 bbls/min, at 3500 psi. Mixed 100 sacks regular cement by HOWCO. Cement hit formation at 2300 psi. Slowed pumps. Displaced with 39 bbls. water and pressure went to 4300 psi. Final pressure 4300 psi. Estimate 69 sacks cement squeezed into formation 29 sacks reversed out, leaving 2 sacks in casing. Estimate squeeze plug at 7457'. Job complete at 5:00 a.m. WOC 24 hours to perforate. Went in hole with Baker full bore cementer to swab test squeeze. Swabbed 40 bbls. water. Waited 1 hr. Made run to bottom. No fluid. Picked up 4 joints of tubing and touched cement at 7458'. Came out of hole to perforate.

1/6/57 PBTD 7456'. Perforated casing from 7380 to 7450' by McCullough using M-3 bullets at 4/ft. Shot from L. W. Gamma Ray Neutron Log. Used collars 7318', 7359' and 7390' on same log. Check squeeze plug at 7456'. Job complete at 3:30 p.m. Ran tubing and Baker full bore retrievable cementer. Set tool at 7320'. Swabbing

1/7/57 PBTD 7456'. Swabbed 118 bbls. water and mud in 12 hrs. Well making small amount of gas. Swabbing. Maximum gas blow of 17,000 cfd. Dying to 3,000 cf/d.

1/8/57 PBTD 7456'. Preparing to sand frac.

1/9/57 PBTD 7456'. Sand fraced down casing with 10,000# sand and 10,000 gallons of water. No breakdown pressure. Initial pressure 800 psi. final pressure 1000 psi. Average injection rate 30 bbls/min. Injected 224 B.J. 3/4" nylon balls. Displaced with 300 bbls. water. Load water in hole 600 bbls.

1.0/57 PBTD 7456'. Preparing to swab. Went in hole with tubing. Found sand at 7205'. Pulled tubing and went back in hole with 6-1/8" bit and washed sand out of casing. Went back in hole with Baker Full bore cementer and set tool at 7320'. Swabbed 473 bbls. load water in 22 hrs.

1/11/57 PBTD 7456'. Swabbing from 7250'. Water coming in at approximately 3 bbls/hr. Maximum gas blow gauged 22,000 cfd. Fairly steady gas blow fluctuating between 10,000 cfd and 15,000 cfd. Pulled tubing and Baker full bore cementing tool. Ran Baker Model "K" squeeze retainer on tubing and set tool at 7331' K.B. No breakdown pressure - form. took fluid on vacuum. Mixed 200 sacks regular cement. Squeezed away estimated 135 sacks into formation. Left 25 sacks squeeze plug in casing. Final squeeze pressure 3800#. Reversed out approximately 38 sacks and left 2 sacks plug on top of retainer. Reversed out with 50 bbls. water. Estimated top of squeeze plug at 7326' K.B. Job completed at 2:00 a.m.

1/12/57 PBTD 7326'KB. W.O.C. Tested cement job with 1000 psi for two hours. Held Okay. Perforated for production by B. J. Service using Lane Wells Gamma Ray measurements. Shot 132 bullets (4/ft.) from 7260' to 7293' K.B. Ran Baker Full Bore retrievable cementer on tubing and set same at 7240' K.B.

1/13/57 PBTD 7326'KB. Swabbing.

1/14/57 PBTD Swabbing a total of 40 bbls. of load water and 78 bbls. of muddy water. Swabbing from 7250' and making one bbl. per run. Fluid level at approximately 7100'. Slight blow of gas ( 8,000 cfd) at end of each swab run but dying in 15 min. Reset Baker Full Bore retrievable cementer at 7210' K.B. Sand fraced down tubing with 6,000# sand and 6,000 gals. water. Breakdown pressure 1,000#. Min. pumping pressure 2900#, max pumping pressure 3800#. Final static pressure 600#. Average injection rate 9.7 bbls/min. Injected 104-3/4" nylon balls. Displaced with 50 bbls. water. Total load water in hole 275 bbls.

FORM 484 REV. 10-53

Colo 03757

DATE February, 1957

JAN 6 1967

# THE OHIO OIL CO
# HISTORY OF OIL OR GAS WELL

FIELD Ryans Creek

WELL NO. 1 LEASE Ryans Creek Unit BLOCK SEC. 34 TWP. 1 S R. 98W

STATE Colorado PARISH COUNTY Rio Blanco

660' from South line
660' from East line

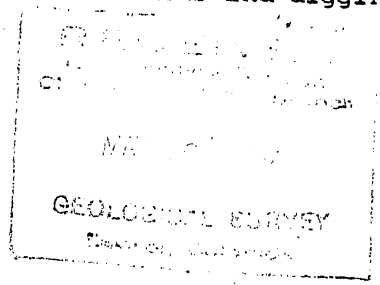
MEASUREMENTS TAKEN FROM
- TOP OF OIL STRING D.F. ELEV. 6741⅝
- TOP OF ROTARY TABLE K.B. ELEV. 6744
- GRD. OR MAT ELEV. 6742⅝
- ELEV. 6732

HISTORY PREPARED BY E. L. Flott

TITLE Associate Geologist

IT IS OF THE GREATEST IMPORTANCE TO HAVE A COMPLETE HISTORY OF THE WELL. USE THIS FORM IN REPORTING THE HISTORY OF ALL IMPORTANT OPERATIONS AT THE WELL, TOGETHER WITH THE DATES THEREOF, INCLUDING SIZE OF HOLE, SIZE AND NUMBER OF BITS, COMPLETE DESCRIPTION OF CASING, CEMENTING, FISHING OR DRILLING DIFFICULTIES, SURVEYS, ALL TESTS, ALL COMPLETION OPERATIONS AND PROCEDURE, ETC.

| DATE 1956 | |
|---|---|
| 9/19/56 | Company tools, String No. 1, Unloading equipment off trucks and digging cellar. |
| 9/20/56 | Leveling location, digging cellar and pits. |
| 9/21/56 | Leveling location, |
| 9/22/56 | Rigging up. |
| 9/23/56 | Unloading equipment and rigging up. |
| 9/24/56 | Raised mast and continuing to rig up. |
| 9/ '56 | Continuing to rig up. Mixing mud. Drilled rat hole. |
| 9/26/56 | Drilled mouse hole and set table. Spudded surface hole. Unloaded casing. Mixing mud and working on mud pump. |
| 9/27/56 | Drilling ahead and bailing for water. Recovered very little. Lost 75 bbls. of mud during evening tour. Put on bit #2. |
| 9/28/56 | Drilled to 613'. Bailed mud out of hole, recovered 1/2 bailer in last two runs. Let set 3/4 hr., water raised 30 ft. in hole, bailed down in three runs. Drilled to 703', bailed hole down, let set one hour. Recovered 2-1/2 bailers water. Put on bit #3. Drilling ahead, |
| 9/29/56 | Drilled to 886'. Pulled out of hole, laid down drill pipe, picked up 15" reamer. Reaming and trip for new reamer. Reaming ahead to 591'. |
| 9/30/56 | Reamed to 654'. Came out of hole to run casing. Ran 18 joints 10-3/4", 40.5# H-90 new casing, 568.21 ft. and 2 joints 10-3/4", 51# H-90 new casing, 65.88 ft. one Baker guide shoe, 1.50 ft., net casing 635.59 ft. and one centralizer. Landed at 650.59' K.B. Cemented with 500 sacks Regular Ideal Cement by HOWCO. Added 2 sacks calcium chloride to last 200 sacks cement. Displaced with 63 bbls. water. Plug at 630' K.B., plug down at 7:30 a.m. with good returns. Washed out collar and drained conductor pipe. Cleaning up rig and rigging up accumulator lines and WOC. |
| 10/ '56 | WOC, nippling up, and installing BOP, |
| 10/2/56 | Tested lines from accumulator to BOP. Closed BOP., functioned properly. Pressured |


Recd 1/6/67 From Frank Stead USGS

10/16/56 Drilling ahead during morning tour. Went in hole with Bit #13. T.D. at midnight, 4691'.

10/17/56 Lost curculation at 4702'. Lost 500 bbls. mud during morning tour. Made trip for Bit #14. Reamed 35' tight hole to bottom. Drilling ahead. T.D. at midnight, 4789'.

10/18/56 Drilling ahead. Lost 90 bbls. mud during morning tour. Painted equipment. Made trip for Bit #15. Drilling ahead. T.D. at midnight, 4950'.

10/19/56 Conditioning mud and circulating for DST #2. Went in hole with Johnston testing tool. DST #2, 4750 - 4950. Recovered 50' mud. Misrun due to plugged tool. Went back in with bit #15. Circulated and conditioned hole for DST #2A. Making up tester. T.D. at midnight 4950'.

10/20/56 Went in hole with Johnston testing tool. DST #2A, 4720 - 4950. Initial SI = 35 min; open 30 min; final SI = 30 min.; very weak blow, immediately increased to 1170' CFA/D in 15 min.; died in 30 min. Recovered 850' mud; SI = none; IFP - 1200#; FFP - 1600#; SIP - 1800#; HP - 2300#. Back in hole with bit #15. Drilling ahead. Began trip for bit #16. T.D. at midnight, 5064'.

10/21/56 Finished trip for Bit #16. Cleaned out bridger in tight hole from 4950' to bottom. Drilling ahead. T.D. at midnight, 5220'.

10/22/56 Drilling ahead. Trip for Bit #17 at 5304'. Reamed out bridge. Drilling ahead. T.D. at midnight, 5378'.

10/23/56 Drilling ahead. Coming out of hole during evening tour for Bit #18. T.D. at midnight, 5510'.

10/24/56 Going in hole with Bit #18, at 5510'. Hit bridge at 5260', drilled out to 5285'. Drilled out and cleaned out from 5,445 to bottom. Drilling ahead. During evening tour lost all mud in #1 vat. Mixed 4 vats mud. Lost mud slowly until 11:15 p.m. T.D. at midnight, 5661'.

10/25/56 Drilling ahead. Lost circulation at 5748' , no return. Mixing mud. Returns at end of daylight tour. Lost 75 bbls. mud during evening tour. Started out of hole for Bit #19. T.D. at midnight, 5770'.

10/26/56 Going in hole with Bit #19, on at 5770'. Cleaned out 20' to bottom. Drilling ahead. Pulled off bottom at 11:15 p.m. to circulate sampler. T.D. at midnight, 5916'.

10/27/56 Made trip for junk sub, worked and cleaned hole for iron. Drilled 4' new hole. Made trip to pull Bit #19. Went in hole with 6-1/8" TRUCO diamond core head. On at 5920'. Coring. Core barrel jammed at 5922' Coming out of hole with Core #1. Going in hole for Core #2. On bottom at 11:15 p.m. T.D. at midnight, 5923'.

10/28/56 Coring, Core barrel jammed, coming out of hole with Core #2 (5922' - 5932') at end of morning tour. Went in hole with Bit #20 at 5920 and reamed core hole. Drilling ahead. T.D. at midnight, 5984'.

10/29/56 Drilling ahead. Coming out of hole at end of evening tour to pick up core head. T.D. at midnight, 6103'.

1 3/56 Coring ahead. Barrel pressured up. Came out with Core #5. Recovered 35' interbedded sandstone and shale. Waiting on new stabilizers for barrel. Going in hole to core. T.D. at midnight, 7141'.

11/14/56 Going in hole. Coring. Lost 25 bbls. of mud. Core barrel jammed. Came out of hole with Core #6. Recovered 23' of interbedded sandstone and shale. (7141' - 7164') Repairing chain at end of tour. T.D. at midnight, 7164'.

11/15/56 Repairing chain. Going in hole for #7. Coring. Would not core. Coming out of hole with Core #7. Recovered 2' (7164' - 7166') of sandstone. Back in hole for Core #8. Came out with Core #8. Recovered 26' of sandstone (7166' - 7192'). Waiting on tester. T.D. at midnight, 7192'.

11/16/56 Waiting on tester. Going in hole with testing tool to test in rat hole. DST #4 by HOWCO. Stopped 38' from bottom. Coming out. Went back in with core barrel to clean out, went to bottom and circulated. Came out with core barrel and went in with testing tool again for DST 4A. Stopped 41' from bottom. T.D. at midnight, 7192'.

11/17/56 Came out with tester. Back in hole with bit #29 and reamed 9" hole to T.D. Tight coming out. Rereamed. Hoisting. Made up tool, went back in hole. Testing. T.D. at midnight, 7192'.

11/18/56 Testing. Hoisting test tool. DST 4B (HOWCO). Misrun. Could not break disc to get tool open. Back in for test 4C. Tested 7118' - 7192'. Two packers. Top packer at 7111'. 1150' water cushion. Open 1 hr. 35 min., SI 55, no initial SI taken, good blow air decreasing to steady weak blow, gauged at 13 Mcf/D. Recovered 3400' fluid (1150' water cushion, 450' gas and slightly water cut drilling mud, 1800' heavily gas cut mud). Loading out tool. Slipping drilling line and going in hole and strapping pipe. Going in hole to cut Core #9. On bottom at midnight at 7192'.

11/19/56 Coring ahead. Twisted off at 7208'. 52' of outer barrel left in hole. Laid down inner-barrel. Dressed overshot and went in to fish at end of evening tour.

11/20/56 Worked over fish. Came out of hole using chain. Fish not recovered, checked overshot, bent single, put on overshot, and went in hole. Circulated over fish, came out of hole, recovered fish. Went in hole with 5 drill collars and junk sub. Reamed rat hole with Bit #30 from 7192' to 7208'. Drilling ahead, T.D. at midnight, 7216'.

11/21/56 Drilling ahead. Losing circulation at 7227'. Lost total of 200 bbls. mud during morning tour. Circulated sample at 7255'. Came out of hole for core barrel. Went in hole to cut Core #10. Coring ahead. T.D. at midnight, 7271'.

11/22/56 Coring ahead, core barrel plugged at 7279'. Coming out of hole to recover core. Going back into hole to cut Core #11. Diamond bit stopped 110' off bottom. Working bit to bottom at midnight.

11/23/56 Would not core correctly. Coming out of hole. No core recovered. Diamond head broken off at bottom of threads and left in hole. Laid down 5-1/2" drill collar, picked up a set of McCullough jars and went in hole with Bit #30. Reamed rat hole from 7255' to 7279'. Found 10' error in pipe measurement, therefore, Core #10 started at 7255' and not 7265'.

/8/56 Drilling ahead. Coming out of hole for Bit #41. Back in hole, bit plugged. Back in hole, bit plugged again. Back in hole, T.D. midnight, 7689'.

12/9/56 Drilling ahead. Hoisting, Back in hole with Bit #42.

12/10/56 Reached T.D. of 7800'. Circulated four hours and started out of hole. Hole tight in several places. Cleaned out bridges and tried to run log. Schlumberger hit bridge at 5700'.

12/11/56 Cleaned out hole and Schlumberger went back in to 6765' and hit bridge. Cleaned out hole with bit and raised Viscosity above 100.

12/12/56 Schlumberger got to bottom Okay. Logged well as follows:

| | | |
|---|---|---|
| Electric Log | 2" and 5" | from 6214' to TD |
| Laterolog | 2" | " 651' to TD |
| " | 5" | " 1720' to 1950' |
| " | 5" | " 2670' to TD |
| Microlog | 5" | " 6778' to TD |

12/13/56 Strung up 8 lines and conditioned hole to run casing. Layed down drill pipe.

12/14/56 Ran 242 joints (7800.12 net feet) 7" casing as follows: 15 joints, 26#, N80, 436.06 Net feet on bottom then 40 joints, 23#, N80, 1636.58 net feet, then 164 joints, 23#, J55, 5044.23 net feet, then 23 joints, 26#, N80, 680.05 net feet on top. Landed float shoe at 7796.37' KB and float collar at 7767.57' KB. Top of casing string was landed 5' above the RT. Cemented with 300 sacks Ideal Regular Slow Set followed by 200 sacks Ideal Regular. Displaced with 304 bbls. water at a maximum pressure of 1000#. Good returns of drilling mud to surface. Bumped plug with 2200#. Released pressure and float held Okay. Pressured casing to 500# and shut it in. Plug down 11:00 a.m.

Ran temperature survey by Lane Wells after plug was down 12 hours, from 5000' to 7250'. Found top of cement at 6630' KB. Tagged PBTD at 7768' KB.

12/15/56 W.O.C. Strapped tubing on rack.

12/16/56 Logged well as follows by Lane Wells.

| | | | | | |
|---|---|---|---|---|---|
| Gamma Ray and Neutron | 2" | scale | from | Surface | to 4700' |
| Gamma Ray, Neutron and Multispaced Neutron | 5" | " | " | 1750' | " 1950' |
| " " " " " " | 5" | " | " | 4700' | " 7768' |
| Logged collars | | | " | PBTD | " Surface |

Rigged up National Type B casing head and 7" Shaeffer blow out preventer. Picked up 2-1/2", 6.5#, J55 tubing with 6-1/8" bit. Hit plug at 7761' with tubing. Pressure tested 7" casing at 1500# for 1 hour, held Okay. Circulated hole with water for 3 hours and pulled tubing to perforate.

12/17/56 PBTD 7768', W.O.C.

18/56 Perforated, using lubricator, by Lane Wells with 15/32" bullets of E gun through 7", 26#, N80 casing, 120 holes from 7620' - 7650' and 116 holes 7724' - 7753', in Mesa Verde Sands. Used casing collars at 7505' and 7564-1/2' on Gamma Ray Neutron Log as reference depths for shooting. Tagged bottom at 7768' with line. Fluid level stayed at 46' from surface. Some gas bubbles came out on the line.

'28/56 Set bridge plug at 7580' and set cementer at 7426'. Swabbed tubing down dry. No sign of gas. Released cementer and came out of hole to sand water frac. HOWCO rigged up to frac. Pressured up to 3500 psig and couldn't break formation down. Went in hole with tubing and Baker full bore cementer with bridge plug retrieving head. Found bridge plug set above perforations at 7426'. Reset bridge plug at 7570'. Set full bore cementer at 7426' and broke formation down with 2000 psig.

12/29/56 PBTD 7768'. Came out of hole with tubing. Sand water fraced with 15,000# of 20-40 mesh sand and 17,000 gals. of water by HOWCO down casing. Mixed first 2000# sand at 1/2#/gal and the rest at 1#/gal. Injected 90 nylon 3/4" balls by B.J. Service at the rate of 1 ball every 7 seconds. Formation broke down at 1700 psi. Pumping in pressure 1600 to 1900 psi. Average injection rate was 29 bbls/min. Displaced sand with about 200 bbls. of water when pressure increased sharply to 3700 psi. Shut all trucks down but one and maintained 3500 psi on casing. Pumping about 2 bbls/min. for 4 min. when formation broke down and completed displacing sand. Total displacement of 300 bbls. water. Final pump pressure 3200 psi. Released pressure and water flowed back for about 20 minutes. Went in hole with tubing and set full bore cementer at 7426'. Started swabbing tubing at 6:00 p.m.

12/30/56 PBTD 7768'. Swabbing. Fluid level remaining at 2500'. No show of gas. Swabbed about 10 balls and a little sand out of hole.

12/31/56 PBTD 7768'. Swabbing. Occasional gas pockets would unload water for 15 minutes and die.

1/1 Shut down for New Years.

1/2/57 PBTD 7768'. Swabbing. Swabbed 500 bbls. of water since 12-30. Fluid level staying about 3000'. Swabbing from 6000'. Making small amount of gas after pulling swab. Dying in 10 minutes.

1/3/57 PBTD 7768'. Inserted Baker full bore cementer. Tried to circulate down to retrieve bridge plug. Frac balls in hole prevented this. Came out of hole with cementer and went back in with tubing and retrieving head for bridge plug. Came out with tubing and bridge plug. Bridge plug top packer ruined and mandrial was sand cut. Went in hole with tubing and Baker Model "K" Bridge plug and stingers sub. Set Bridge Plug at 7460' K.B. Pressured up tubing to cement squeeze off perforations. Model "K" leaking, letting pressure equalize on casing. Came out of hole with tubing. Strapped tubing and found tubing had stretched 25' putting Model "K" in perforations at 7485'. Went in hole with tubing and HOWCO D-C bridge plug with stinger and tubing tester. Set D-C plug at 7460'. Pressured tubing and tubing parted. Screwed back into fish and came out of hole. Found one bad collar and replaced same.

1/4/57 PBTD 7457'. Went back in hole with tubing and set stinger in D-C bridge plug at 7460'. Put 1000 psi on casing. Pumped 3 bbls/min at 3000 psi into formation. Mixed 100 sacks regular cement by HOWCO. 1800 psi while mixing cement. Cement hit formation at 2600 psi and gradually increased to 3900 psi. Slowed pumps to 1/2 bbls/min. Pressure dropped to 2400 psi. Staged for 1 minute with 2 bbls. displacement left. Pressure bled off to 400 psi. Built pressure to 2200 psi. and staged for 5 min. Pressure bled off to 500 psi. Cement cleared to tool with 44.9 bbls. water. No squeeze. Cleared perforations with 2 bbls. water. Set 2 stands tubing back and waited 8 hours to squeeze again.

15/57 PBTD 7326' K.B. Swabbing.

1/16/57 PBTD 7326' K.B. Swabbed a total of 249 bbls. of load water. Fluid level at 7100'. Swabbing 2 bbls. of water per hour. Slight blow of gas at end of each swab run (7000 cfd) dying in 15 minutes.

1/17/57 PBTD 7195' K.B. Pulled tubing and Baker Full Bore retrievable cementer. Set Baker Model "W" Bridge plug by B. J. Service at 7195' K.B. Ran junk chaser ahead of bridge plug. Perforated for production by B. J. Service using Lane Wells Gamma Ray measurements. Shot 120 bullets from 7100' to 7130' K.B. (4/ft). Ran Baker Full Bore retrievable cementer on tubing and set same at 7055' K.B. Started swabbing.

1/18/57 PBTD 7195' K.B. Swabbed a total of 40 bbls. of load water and 1 bbl. muddy water. Swabbing from 7050' and making 8 bbls. water per hour. Fluid level holding at 6400' K.B. Slight blow of gas (7,000 cfd) at end of each swab run, dying in 15 minutes. Started in hole with Baker Model "K" retainer. Retainer accidently set at 110' K.B. Preparing to drill out retainer.

1/19/57 Drilling on retainer.

1/20/57 Knocked retainer loose and drove same to bottom. Set Baker Model "K" retainer at 7020' K.B. Mixed 150 sacks regular cement. No breakdown pressure - form. Taking cement on vacuum. Squeezed away estimated 125 sacks into form. Left 15 sacks plug below retainer and 7 sacks plug on top of retainer. Reversed out estimated 3 sacks cement. Reversed with 50 bbls. water. Estimated top of cement plug at 6970' K.B. Started tearing down rig.

1/21/57 Rig released 8:00 a.m. Well temporarily suspended.